

EO Scanned Micro-LADAR, Phase I

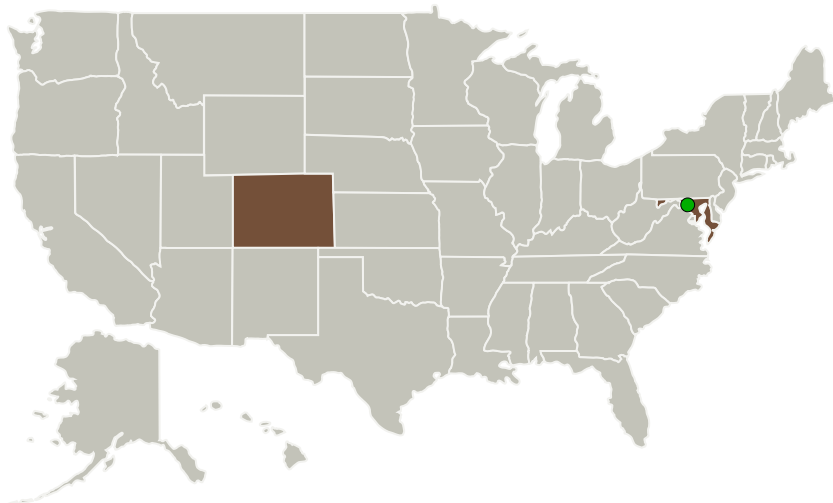
Completed Technology Project (2013 - 2013)




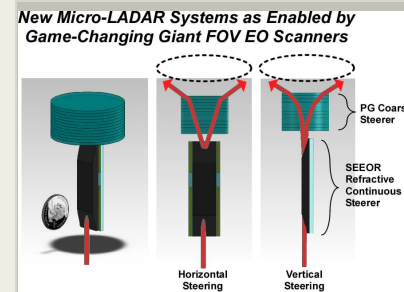
Project Introduction

In this SBIR program we will develop, design and build new scanning based micro-ladar sensors with unprecedented small size, weight, and power (SWaP), thereby enabling scanning ladar deployment on previously inaccessible platforms such as satellites. The system will range out to > 1 km, have high frame rates, high resolution (up to 1000×1000), high range accuracy (< 15 cm), weigh only tens of grams, be constructed from space deployable technologies with no-moving parts. The enabling technology for the proposed Micro-LADAR system is a combination of two new electro-optic laser scanning technologies: high speed refractive continuous scanners with a $60^\circ \times 15^\circ$ field of view (FOV) and diffractive-waveplate discrete or step-wise scanners to boost the total FOV up to $120^\circ \times 120^\circ$. The results will be a very low-power, long-life (no moving parts), radiation hard, micro-LADAR.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Vescent Photonics, Inc.	Lead Organization	Industry	Arvada, Colorado
 Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland



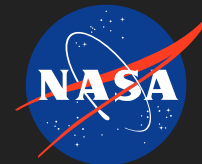
EO Scanned Micro-LADAR Project Image

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Primary U.S. Work Locations

Colorado

Maryland

Project Transitions

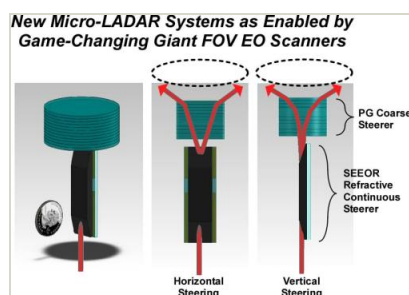
May 2013: Project Start

November 2013: Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/140428>)

Images



Project Image

EO Scanned Micro-LADAR Project Image

(<https://techport.nasa.gov/image/136739>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Vescent Photonics, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Scott R Davis

Co-Investigator:

Scott Davis

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Technology Maturity (TRL)

Start: **4**
Current: **5**
Estimated End: **5**



Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.5 Lasers

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System